

# Software Engineering-1 (CS504)

## Assignment # 4

Total marks = 20  
Deadline Date = 20-06-2011

Please carefully read the following instructions before attempting the assignment.

### Rules for Marking

It should be clear that your assignment would not get any credit if:

- The assignment is submitted after due date.
- The submitted assignment does not open or file is corrupt.
- **The assignment is copied. Note that strict action would be taken if the submitted assignment is copied from any other student. Both students will be punished severely.**

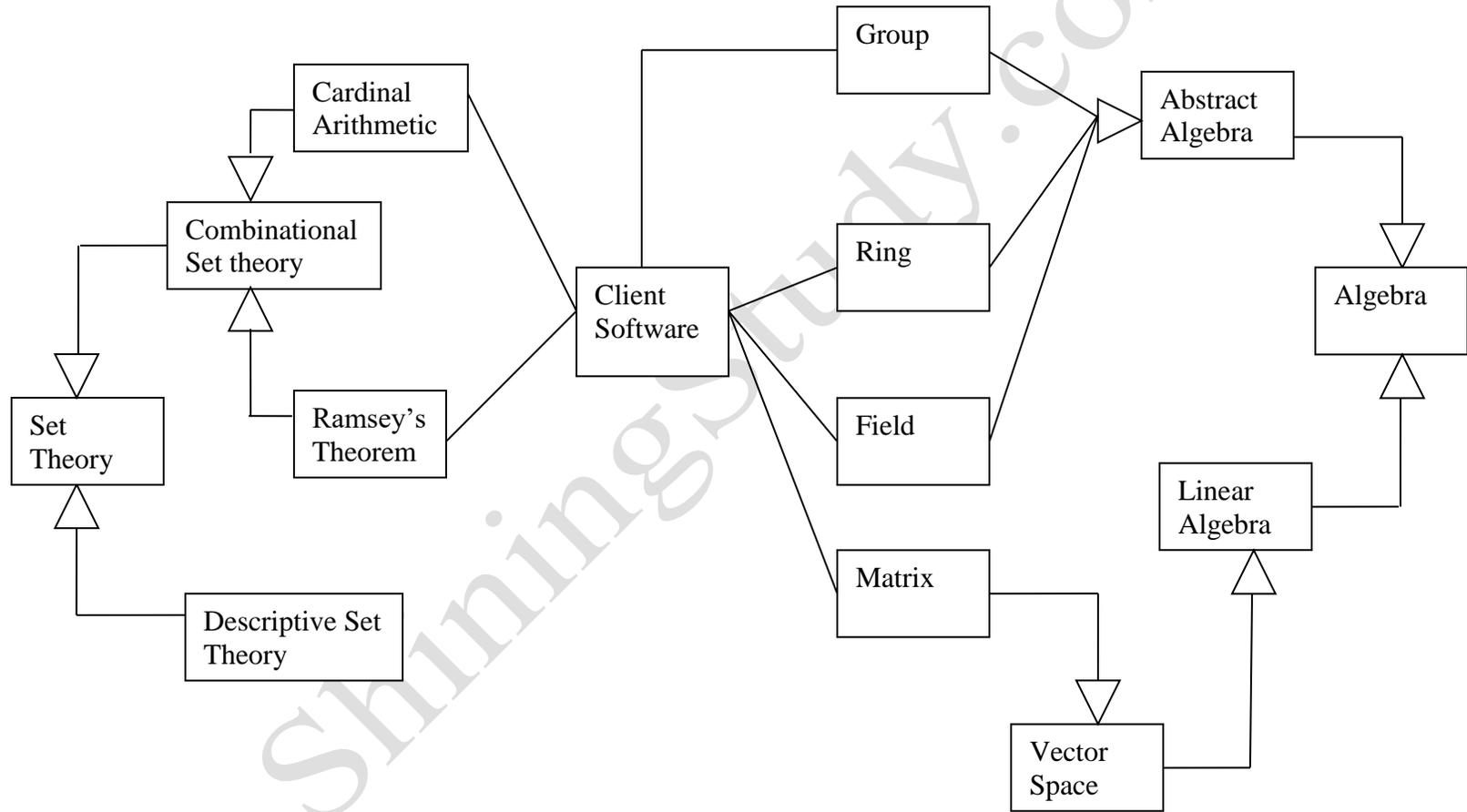
- 1) You should concern recommended books to clarify your concepts as handouts are not sufficient.
- 2) You are supposed to submit your assignment in **.doc format**. Any other formats like scanned images, PDF, Zip, rar, bmp, docx etc will not be accepted
- 3) **You are advised to upload your assignment at least two days before Due date.**
- 4) This assignment file comprises of **Two (3)** pages.

### Important Note:

Assignment comprises of Two (2) Questions and Total 20 Marks. Note that no assignment will be accepted after due date via email in any case (whether it is the case of load shedding or emergency electric failure or internet malfunctioning etc.). Hence, refrain from uploading assignment in the last hour of the deadline, and try to upload Solutions at least **02** days before the deadline to avoid inconvenience later on.

For any query please contact: [CS504@vu.edu.pk](mailto:CS504@vu.edu.pk)

**Question No. 1 [Marks 10]:** Given Below is the supposed rough Object Model of a mathematics library, which can be used by any (client) software, to perform mathematical calculations. The client software can call the functionality through class objects. You need to re-arrange (re-design) this object model by implementing the Façade Pattern (i.e. you need to implement façade pattern on this model).



**Question No 2 [Marks 10]:**

In an auction house, there is a client/server system deployed. The bidders login from client panel and the auctioneer (the person who controls the entire process) logs in as administrator for the entire process on server panel. The bidding process is as follows:

- ⇒ The bidding starts with an initial amount specified by administrator, shown to all the bidders on screen
- ⇒ Now all the other bidders start bidding with their own amounts (normally more than previous bid) at their turn.
- ⇒ Each time a new bid is posted by bidder, it is automatically (immediately) shown to all the bidders with updated amount (on their screen.)
- ⇒ The process continues until a certain bidder with maximum bid amount wins (when there are no more bids)

Now two students “Student-A” and “Student-B” both analyzing the above system, make following arguments:

**Student-A:** “I think this system represents the phenomenon, very much represented by observer pattern, in fact this is an example of observer pattern”

**Student-B:** “No, this is not observer pattern, according to my experience this is an analogy of Singleton pattern”

**Analyze the arguments of both students, and suggest with solid reasons that which argument seems to be more realistic and why?**